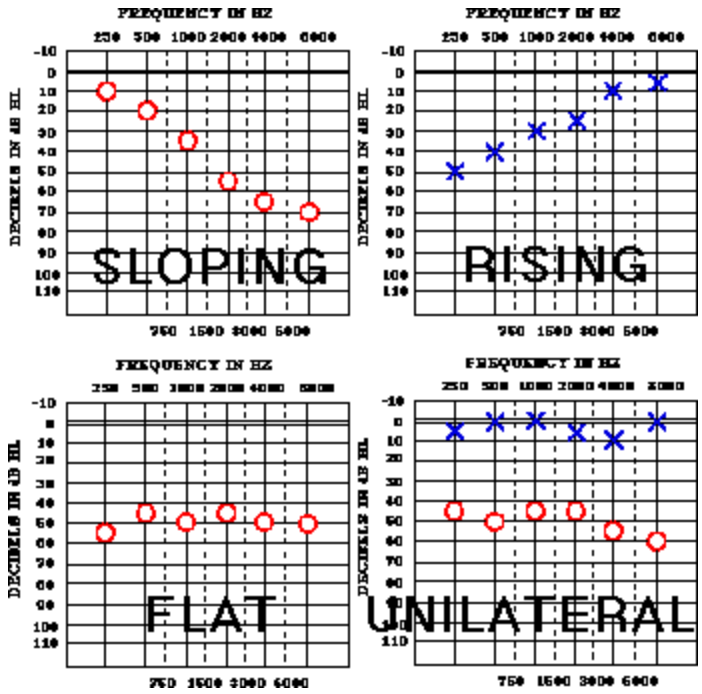
AUDIOMETRIC TESTING, FOLLOW-UP, AND REFERRAL

Purpose of Audiometric Testing

- Monitor effectiveness of HCP
- Determining cause of hearing loss
- Fitness for duty
- Proper referral
- HC education and HPD fitting



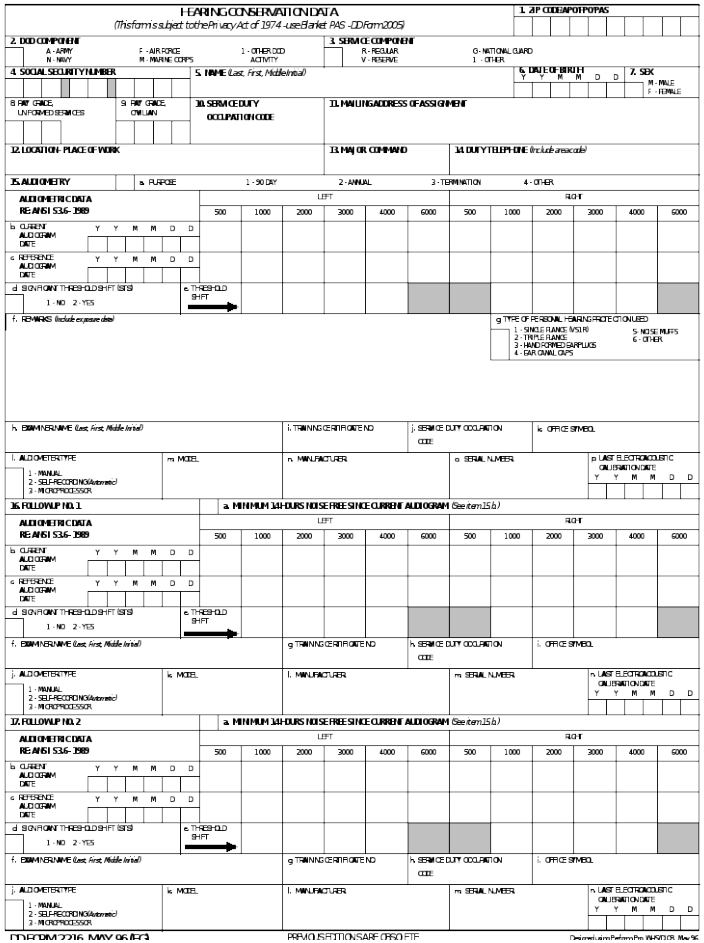
Measurement of Hearing

- Puretone Air Conduction only
- Measured frequencies: 500-6k Hz
- Threshold of hearing: Softest volume of sound that can be detected at least 50% of the time
- Degrees of Hearing Loss
  - Normal: -10 to 25dB
  - Mild: 30 to 45dB
  - Moderate: 50 to 65dB
  - Severe: 70 to 85dB
  - Profound: 90+dB

Reference Audiogram (DD2215)

- Acts as a reference for future evaluations
- Required on all military personnel
- Required on all DOD civilians enrolled in the HCP
- Must be completed prior to working in noise
- No ENT problems
- 14 hours away from noise greater than 80dBA; NO HPD use to meet this requirement
- Reference is re-established after a confirmed STS

Hearing Conservation Data (DD 2216)



HEARING CONSERVATION DATA

(This form is subject to the Privacy Act of 1974 - use Blanket PAS - DD Form 2005)

1. AP COGAPOTPOPAS

2. DOD COMPONENT — A - ARMY; N - NAVY; F - AIR FORCE; M - MARINE CORPS; 1 - OTHER DOD ACTIVITY

3. SERVICE COMPONENT — R - REGULAR; V - RESERVE; G - NATIONAL GUARD; 1 - OTHER

4. SOCIAL SECURITY NUMBER

5. NAME *(Last, First, Middle Initial)*

6. DATE OF BIRTH (Y Y M M D D)

7. SEX — M - MALE; F - FEMALE

8. PAY GRADE, UNIFORMED SERVICES

9. PAY GRADE, CIVILIAN

10. SERVICE DUTY OCCUPATION CODE

11. MAILING ADDRESS OF ASSIGNMENT

12. LOCATION - PLACE OF WORK

13. MAJOR COMMAND

14. DUTY TELEPHONE *(Include area code)*

15. AUDIOMETRY — a. PURPOSE — 1 - 90 DAY; 2 - ANNUAL; 3 - TERMINATION; 4 - OTHER

AUDIOMETRIC DATA RE: ANSI S3.6-1989

	LEFT						RIGHT					
	500	1000	2000	3000	4000	6000	500	1000	2000	3000	4000	6000
b. CURRENT AUDIOGRAM DATE (Y Y M M D D)												
c. REFERENCE AUDIOGRAM DATE (Y Y M M D D)												
d. SIGN FOR A THRESHOLD SHIFT (STS)? (1 - NO; 2 - YES)												
e. THRESHOLD SHIFT →												

f. REMARKS *(Include exposure data)*

g. TYPE OF PERSONAL HEARING PROTECTION USED — 1 - SINGLE FLANGE MOLDED; 2 - TRIPLE FLANGE; 3 - HAND FORMED EARPLUGS; 4 - EAR CANAL CAPS; 5 - NOISE MUFFS; 6 - OTHER

h. EXAMINER NAME *(Last, First, Middle Initial)* | i. TRAINING CERTIFICATE NO. | j. SERVICE DUTY OCCUPATION CODE | k. OFFICE SYMBOL

l. AUDIOMETER TYPE — 1 - MANUAL; 2 - SELF-RECORDING (Automatic); 3 - MICROPROCESSOR | m. MODEL | n. MANUFACTURER | o. SERIAL NUMBER | p. LAST ELECTROACOUSTIC CALIBRATION DATE (Y Y M M D D)

16. FOLLOW-UP NO. 1 — a. MINIMUM 14 HOURS NOISE-FREE SINCE CURRENT AUDIOGRAM *(See item 15 b)*

AUDIOMETRIC DATA RE: ANSI S3.6-1989

	LEFT						RIGHT					
	500	1000	2000	3000	4000	6000	500	1000	2000	3000	4000	6000
b. CURRENT AUDIOGRAM DATE (Y Y M M D D)												
c. REFERENCE AUDIOGRAM DATE (Y Y M M D D)												
d. SIGN FOR A THRESHOLD SHIFT (STS)? (1 - NO; 2 - YES)												
e. THRESHOLD SHIFT →												

f. EXAMINER NAME *(Last, First, Middle Initial)* | g. TRAINING CERTIFICATE NO. | h. SERVICE DUTY OCCUPATION CODE | i. OFFICE SYMBOL

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17. FOLLOW-UP NO. 2 — a. MINIMUM 14 HOURS NOISE-FREE SINCE CURRENT AUDIOGRAM *(See item 15 b)*

AUDIOMETRIC DATA RE: ANSI S3.6-1989

	LEFT						RIGHT					
	500	1000	2000	3000	4000	6000	500	1000	2000	3000	4000	6000
b. CURRENT AUDIOGRAM DATE (Y Y M M D D)												
c. REFERENCE AUDIOGRAM DATE (Y Y M M D D)												
d. SIGN FOR A THRESHOLD SHIFT (STS)? (1 - NO; 2 - YES)												
e. THRESHOLD SHIFT →												

f. EXAMINER NAME *(Last, First, Middle Initial)* | g. TRAINING CERTIFICATE NO. | h. SERVICE DUTY OCCUPATION CODE | i. OFFICE SYMBOL

j. AUDIOMETER TYPE — 1 - MANUAL; 2 - SELF-RECORDING (Automatic); 3 - MICROPROCESSOR | k. MODEL | l. MANUFACTURER | m. SERIAL NUMBER | n. LAST ELECTROACOUSTIC CALIBRATION DATE (Y Y M M D D)

DD FORM 2216, MAY 96 (ES) — PREVIOUS EDITION IS OBSOLETE — Designed using PerformPro, WHS/DIOR, May 96

- Records results of annual, termination, and follow-up evaluations
- Must have a valid DD2215
- Required annually for all HCP-enrolled personnel
- Results are compared to the DD 2215 for evidence of STS
- No noise-free requirement
- The form accommodates 3 separate tests

Types of Audiograms

- 90 day (DD 2216)
  - Administered 90 days after initial employment
  - Helps determine susceptibility of HL
- Pre/post Deployment (DD 2216)
  - Administered before & after deployment
  - Compare results to most recent DD 2215
  - Determines HL acquired during deployment

Follow-up Audiogram's (DD 2216)

- Follow-ups #1 and #2 (if needed) performed after an STS identified
- Preceded by 14 hours of auditory rest (quiet) except in case of improved hearing (negative STS)
- Not on same day as annual unless STS toward improved hearing
- Both follow-ups can/should be done same day
- Compare results to reference audiogram
- All follow-up testing should be completed within 30 days of the annual test

Termination Audiogram (DD 2216)

- Military personnel must have a termination audiogram prior to leaving active duty
- Civilians who discontinue working in a noise-hazardous environment and are removed from the HCP must have a termination audiogram upon removal
- Civilians remaining in the HCP must have a termination audiogram prior to leaving civil service

Non-Hearing Conservation Tests

- Individuals not routinely exposed to hazardous noise
- Includes physicals
- Do not compare results to a reference or previous audiogram.
- Does not require referral for follow-up by Occupational Audiology.
- Refer for clinical evaluation if appropriate.

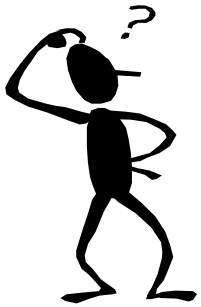
Diagnostic Audiology Evaluations

- Administered by audiologists.
- Results often recorded in graph form
  - “O”= Right ear, “X” = Left ear
- Technicians may be required to transfer results from diagnostic audiogram into the DOEHRS-HC software application.

What Is An STS?

Definition: An average shift of greater than or equal to 10 dB (positive or negative) at 2000, 3000 and 4000 Hz in either ear.

A shift in hearing of 15 dB or more (positive or negative) at 1000, 2000, 3000 or 4000 Hz in either ear is no longer an STS, but is considered an **early warning** for c[illegible]



STS Procedures

- **No STS on annual/periodic test – counsel patient on results and re-test within 12 months.**
- **If Negative STS (improved hearing) on annual/ periodic test:**
  - **Repeat test immediately. If shift confirmed, revise reference with no additional actions required.**
  - **If negative STS resolved, return to annual testing status.**
- **If Positive STS (worsened hearing) on annual/periodic, explain results, then:**
  - **Perform otoscopic exam and tympanometry to rule out canal occlusion or middle ear problem, medical referral if needed.**
  - **If no conductive problem is evident, schedule follow-up #1 on another day, 14 hrs noise-free. Counsel and re-fit HPDs.**
- **If Follow-up #1 shows STS resolved, counsel/explain temporary threshold shift suggests inadequate personal protection, return to annual testing.**

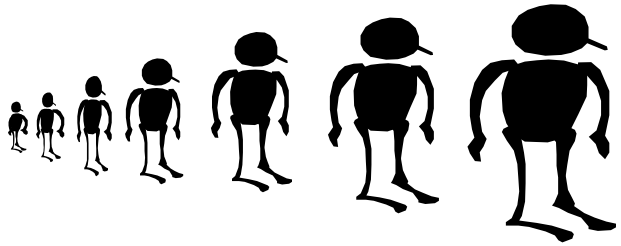
STS/PTS Procedures (cont.)

- **If STS persists on follow-up #1, perform follow-up # 2, preferably immediately.**
- **If STS resolved on f-u #2, counsel patient, again check HPD's, return to annual testing.**
- **Persisting STS now considered permanent threshold shift (PTS). Action depends on local SOP:**
  - **If Audiologist or accepting physician has provided written guidelines for hearing WNL, take action as directed**
  - **If no written guidelines, refer patient for evaluation and recommendation**
- **Revise reference audiogram (done by Audiologist or Technician)**
  - **DD 2215 Reason for test is # 3 (revised after follow-up)**
  - **Make REMARKS entry, "Revised per……**
  - **Ensure new reference resides in local microprocessor system**

PTS Procedures, con't.

- PTS Definition: An STS that an Audiologist or physician has confirmed to be permanent
- Provide patient written notification of STS
- Notify patient's supervisor that the worker has experienced a decrease in hearing (HIPAA/privacy act applies). This alerts Supervisor and Safety to observe patient's personal protective practices.
- Information regarding Civilians meeting OSHA recordable criteria is provided to the local Safety office for OSHA Log entry.

NOTE: Must complete monitoring sequence within 30 days!!



Data Management/ Records Maintenance

- Printed audiograms must be placed in patient's medical record
- File above DD2215, most recent 2216 on top
- Never remove audiograms from a patient's record
- Electronically export hearing tests to Data Registry (minimum weekly, preferably daily)
- Maintain backup file on external media

When to Refer To An Audiologist

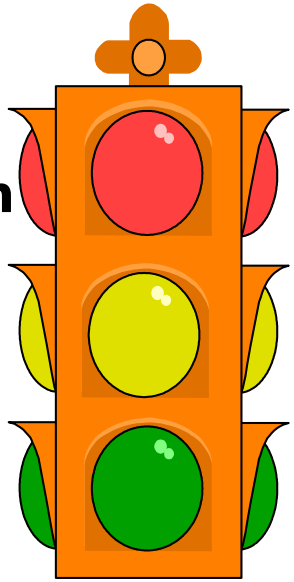
- When results of the reference audiogram (DD 2215) demonstrate abnormal hearing : >25dB at 500, 1000, 2000 or 3000 Hz, $\geq$ 45 dB at 4000 or 6000 Hz
- Unilateral or Asymmetrical hearing loss
- When the patient sustains an STS after the second follow-up test (DD 2216)
- Tinnitus, difficulties in background noise
- Fitness For Duty Issues, failure to meet certification exam criteria
- Whenever thresholds between ears at the same frequency differ by 40 dB or more (patient will require an audiogram with masking)
- Unreliable responses
- Collapsing ear canals
  - Tech's should examine the medical record and ensure that the patient has not been previously evaluated for any of the above mentioned criteria.

When to Refer To A Medical Officer/physician

- **Whenever there is a complaint or symptom of:**
  - **Ear pain**
  - **Ear drainage**
  - **Severe or persistent tinnitus of recent or sudden occurrence**
  - **Vertigo (severe dizziness)**
  - **Sudden hearing loss**
  - **Visible abnormality on otoscopic exam**

Audiometric Fitness For Duty: The 270/3 STS Rule (Navy Only)

- **As described in OPNAV 5100.19 and 5100.23 series, when the sum of the thresholds at 3000, 4000 and 6000 Hz in both ears is greater than 270 dB;**
- **Or when the reference audiogram has been re-established 3 times…**
- **Refer to Audiology or Occupational Medicine for a Fitness for Duty evaluation**
- **The purpose of the 270 and Three STS Rules is to trigger multi-disciplinary evaluation of fitness for duty in individuals showing a marked susceptibility to noise induced hearing loss**



Profiles (Army & Air Force Only)

- Physical Profile – a system of codes that designate an individual's fitness for duty
- The letter "H" represents Hearing
- The number that follows the "H" represents the degree of hearing impairment
- The larger the number, the more hearing impairment, and the less fit for duty

Army Profiles

- H-1 = avg ≤25dB @ 5, 1 & 2k, no individual threshold greater than 30. 4kHz must be 45dB or less.
- H-2 = avg ≤30dB @ 5, 1 & 2k, no level greater than 35. 4kHz = 55dB or less. Or if asymmetrical loss, better ear can't exceed 30 at 500, 25 at 1 & 2k, & 35 @ 4k.
- H-3 = SRT in better ear ≤30dB with or without hearing aid; or acute/chronic ear disease
- H-4 = worse than H-3

Air Force Profiles

- H-1 = ≤25dB @ 500-2k, 35dB @ 3k, and 45dB @ 4 & 6k.
- H-2 = ≤35 @ 500-2k, 45dB @ 3k, and 55dB @ 4k.
- H-3 = greater than H2. Warrants fitness for duty eval.
- H-4 = HL that precludes safe/effective job performance with/without hearing aids. Requires medical board.

Questions?